

DESCRIPTIONS OF SOME WESTERN LIMNEPHILIDAE (Trichoptera)

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The species recorded in this paper come chiefly from the Cascade Mountain region of Oregon and Washington. I am deeply indebted to Kenneth M. Fender, Stanley G. Jewett, and Hugh B. Leech for procuring most of the material on which the paper is based. Types are deposited in the collections of the Illinois Natural History Survey (INHS) or the California Academy of Sciences (CAS).

LIMNEPHILUS Leach

Limnephilus lopho Ross, new species

This species is most closely related to *cockerelli* Banks and *harrimani* Banks, the male differing from both in having the cerci shorter than the lobes of the tenth tergite, and in the very distinctive feature of possessing a large, padlike, sclerotized lateral lobe which appears as a ventrolateral subdivision of each lobe of the tenth tergite, fig. 1.

Male—Length 13 mm. Head, scape, body, and legs to tip of femora dark brown; flagellum, palpi, and legs beyond femora, very pale brown, the legs with black spines; wings light brown with darker brown markings along the veins and along the posterior edge. General structure typical for genus. Head bears one large and several small pale macrochaetae mesad of, and slightly posterior to, each lateral ocellus. Pronotum bears many stout macrochaetae. Front legs have a row of minute black spicules on the ventral margin of the femur, starting at the base and gradually fading out about halfway to the apex; basitarsus one and one half times the length of succeeding segment. All legs with apical segment of tarsus having none to three short black spines; in one series of five specimens, two individuals have no spines on any apical segments. Eighth tergite with only a few scattered short setae on apical margin, its meson not produced into a lobe.

Genitalia as in figs. 1, 1A, and 1B. Ninth segment narrow both dorsad and ventrad but fairly long along the lateral dimensions. Cerci not extending posteriad as far as lobes of tenth tergite; each cercus in lateral view is almost parallel-sided, moderately wide

and rounded at apex, bearing a scattering of long setae; from dorsal view each is slightly thickened at base, rounded at apex, and bears a heavily sclerotized mesal area toward the tip. Claspers reduced to a small triangular lobe with a short posterodorsal projection and bearing about eight long, black, slender setae in addition to the shorter vestiture. Each lobe of tenth tergite has a long, deep, dorsal portion, its posterior margin oblique and almost straight, its upper corner fairly sharp, the posterior half of the lobe heavily sclerotized; below and to the side of this dorsal lobe is a smaller, flat, padlike structure also heavily sclerotized and reticulate; in uncleared specimens, this lobe fits tightly against the dorsal lobe and is easily overlooked. Aedeagus elongate, fig. 1B, the central portion slightly swollen at base and curved up into an ovoid tip; each lateral arm is heavily sclerotized, and bent up sharply at the apex, the apex bearing a thick brush of moderately long and stout hairs.

Female—Length 14 mm. Color, including wings, mostly tawny with scattered areas of darker brown, and with the dorsum of abdomen and venter of both thorax and abdomen moderately dark brown. General structure typical for genus. Genitalia as in figs. 1C and 1D. Subgenital plate with narrow mesal tongue, lateral lobes with ventral flap overlying most of dorsal flap. Ninth segment narrow dorsally, the ventral portion forming a single broad area slightly incised on the meson at apex. Cerci large, fused at base with base of tenth segment. Tenth segment with dorsum sharply notched for a short distance, the ventral portion incised almost to base and thus forming what appear as two sclerotized lateral flaps.

Holotype, male, HOOD RIVER MEADOWS, MT. HOOD, OREGON, July 17, 1948, K. M. Fender (INHS).

Allotype, female, Mt. Hood Meadows, Mt. Hood, Oregon, July 31, 1948, K. M. Fender (INHS).

Paratypes, same data as for holotype, 4♂; same data as for allotype, 13♂, 16♀. Paratypes are deposited in the collections of the California Academy of Sciences and the Illinois Natural History Survey.

Limnephilus santanus Ross, new species

On the basis of general appearance and size, this species appears related to *fumosus* Banks. The female of *santanus* differs from the female type of *fumosus* in the structure of the subgenital plate and in having the long dorsal processes of the tenth segment slender and light rather than heavily sclerotized and blade-like.

Male—Length 18 mm. Head and thorax dark brown, almost black, with a few lighter brown areas along the sutures; antennae dark brown with the apex of each segment lighter; palpi and mouth parts yellow, as is the adjacent area of the head; legs below coxae yellow with black spines; abdomen a moderate shade of brown; front wings chocolate brown with conspicuous straw-colored clear areas, including large spots at the end of cells R_5 , M_2 , and M_3 , at the base of the cells forming the cord, most of the costal cells, and a diagonal stripe from base of stigma to Cu_{1a} , the remainder of the wing variegated with small pale spots; hind wing straw-colored except for the apex of the wing which is suffused with darker color, especially on the anterior corner. General structure typical for genus. Head bearing a stout white macrochaeta posteromesal to each lateral ocellus. Warts of scutum poorly defined. Front legs with basitarsus one and a half times length of next segment; femur elongate and slender, with a narrow brush of very short black spinules along posteromesal margin, starting at base and gradually fading out beyond the middle of the segment. Abdomen with eighth tergite similar to seventh, without posteromesal projections or brushes.

Genitalia as in figs. 2, 2A, and 2B. Ninth segment narrow ventrally, reduced to a fairly sharp angle dorsally. Cerci stout, very convex laterally, the apical margin sclerotized and broken into small black teeth, the two cerci touching on the meson at extreme base. Claspers projecting and pointing, clothed with long pale setae. Tenth tergite divided into a pair of narrow upturned lobes, heavily sclerotized at apex. Aedeagus, fig. 2B, with base of central process striate at base with folds of membrane; lateral arms sinuate, upturned at apex, each with a mesal fold bearing long spines, the extreme apex bearing whorls of spines and a few stouter ones at tip.

Female—Similar in size and general characteristics to male. Genitalia as in fig. 2C. Subgenital plate with narrow mesal tongue which is longer than lateral lobes; each of the latter broad at apex, the ventral flap occupying not more than half of the area of the lobe. Ninth sternite almost completely divided on meson to form a pair of rounded lateral lobes. Cerci elongate and somewhat pear-shaped, appressed on the meson and overlying very closely the tenth segment. Tenth segment almost completely divided into dorsal and ventral parts, the dorsal portion forming a pair of slender, curved, weak processes, concave below, the ventral portion forming a stout vasiform structure narrowed at apex, its mesal margin excavated.

Holotype, male, ODELL LAKE, OREGON, August 1, 1948, K. M. Fender (INHS).

Allotype, female, same data (INHS).

Paratypes, Pringle Falls Experiment Station, Oregon, June 7, 1935, V. E. Shelford, 1♂ (INHS); Marion Lake, Oregon, July 1, 1936, 3♂, 2♀ (D. G. Denning and INHS).

LIMNEPHILUS FRIJOLE ROSS

A collection of this species from Adobe Creek, Stanislaus County, 12 miles west of Patterson, California, May 23, 1948, Hugh B. Leech, extends the range of this species from the southeastern Rockies into the Western ranges. The two California males check very well with the holotype from Texas but differ slightly, fig. 3, in having the claspers noticeably longer. Other details of the genitalia are almost identical. In the original description a quartering view is given of the inner surface of the cercus. I am including here a straight mesal view to show the relationship between the apex of the tenth tergite and the inner toothed lobe of the cercus.

This species is of more than usual interest in that characters of the genitalia indicate a fairly close relationship with *lunonus* Ross; in *frijole* the front basitarsus is very short, but in *lunonus* the front basitarsus is equal in length to the second.

CHYRANDA ROSS

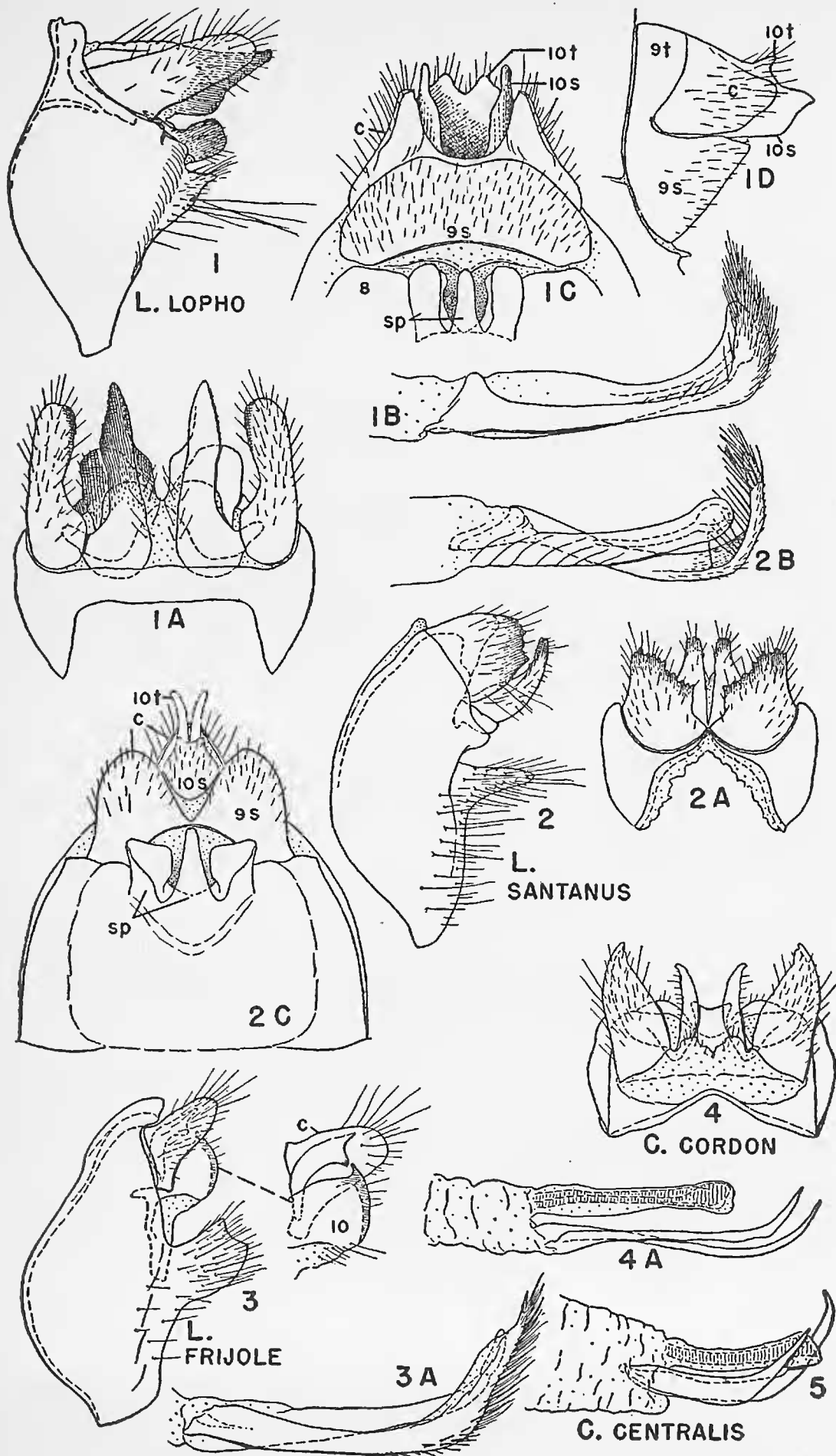
Chyranda cordon Ross, new species

The general outline of male genitalia in this species is very similar to that of *centralis* (Banks), but *cordon* differs in the slender, elongate, and similar lateral arms of the aedeagus, fig. 4A, and the emarginate tenth tergite and the sclerotized flanges which run lateroventrad from it; *centralis* has the two lateral arms of the aedeagus extremely asymmetrical and with the apical half sharply angled dorsad, fig. 5, and the flanges of the tenth tergite indistinct.

EXPLANATION OF PLATE I

Fig. 1. *Limnephilus lopho*, male genitalia, lateral aspect; 1A, male genitalia, dorsal aspect; 1B, aedeagus, lateral aspect; 1C, female genitalia, ventral aspect; 1D, female genitalia, lateral aspect; Fig. 2. *Limnephilus santanus*, male genitalia, lateral aspect; 2A, male genitalia, dorsal aspect; 2B, aedeagus, lateral aspect; 2C, female genitalia, ventral aspect. Fig. 3. *Limnephilus frijole*, male genitalia, lateral aspect, inset showing mesal aspect of tenth tergite and clasper; 3A, aedeagus, lateral aspect. Fig. 4. *Chyranda cordon*, male genitalia, dorsal aspect; 4A, aedeagus, lateral aspect. Fig. 5. *Chyranda centralis*, aedeagus, lateral aspect.

Abbreviations used: *c*, cercus; *s*, sternite or sternal portion; *sp*, subgenital plate; *t*, tergite or tergal portion.



Male—Length 14 mm. Color brownish-yellow throughout, the antennae slightly darker and the leg spines black. General structure typical for genus. Male genitalia similar in general proportions to those illustrated for *centralis* (Ross, 1938, fig. 45). Ninth segment reduced to a narrow strap dorsad, wide in the middle, and narrowed to a point ventrad.

Genitalia as in figs. 4 and 4A. Cerci large and earlike, rounded at apex; each bears a mesal, curved, bladelike process nearly as long as the outer portion, the two hinged at base but indubitably connected with each other, fig. 4. Tenth tergite represented by a large triangular plate which fills up the space between the top of the claspers and the base of the cerci, this plate not bearing the usual conspicuous paired lobes considered typical of the tenth tergite, but instead a pair of raised diagonal flanges arising near the ventrolateral corner of the sclerite and terminating at the dorso-mesal corner (between the mesal processes of the cerci) in a short stout projection emarginate from dorsal view. Claspers broad and deep, appressed to the ninth segment and appearing to be only sclerites of it. Aedeagus, fig. 4A, with a moderately stout mesal process and with a pair of lateral processes which are almost identical in size and shape, much longer than the mesal process and upcurved at apex.

Holotype, male, PEAVINE RIDGE, McMinnville, Oregon, Station 3A, September 6, 1946, K. M. Fender (INHS).

Paratype, Beaver Cr., Mt. Hood, Oregon, August 1, 1948, K. M. Fender (INHS).

PHILOCASCA Ross

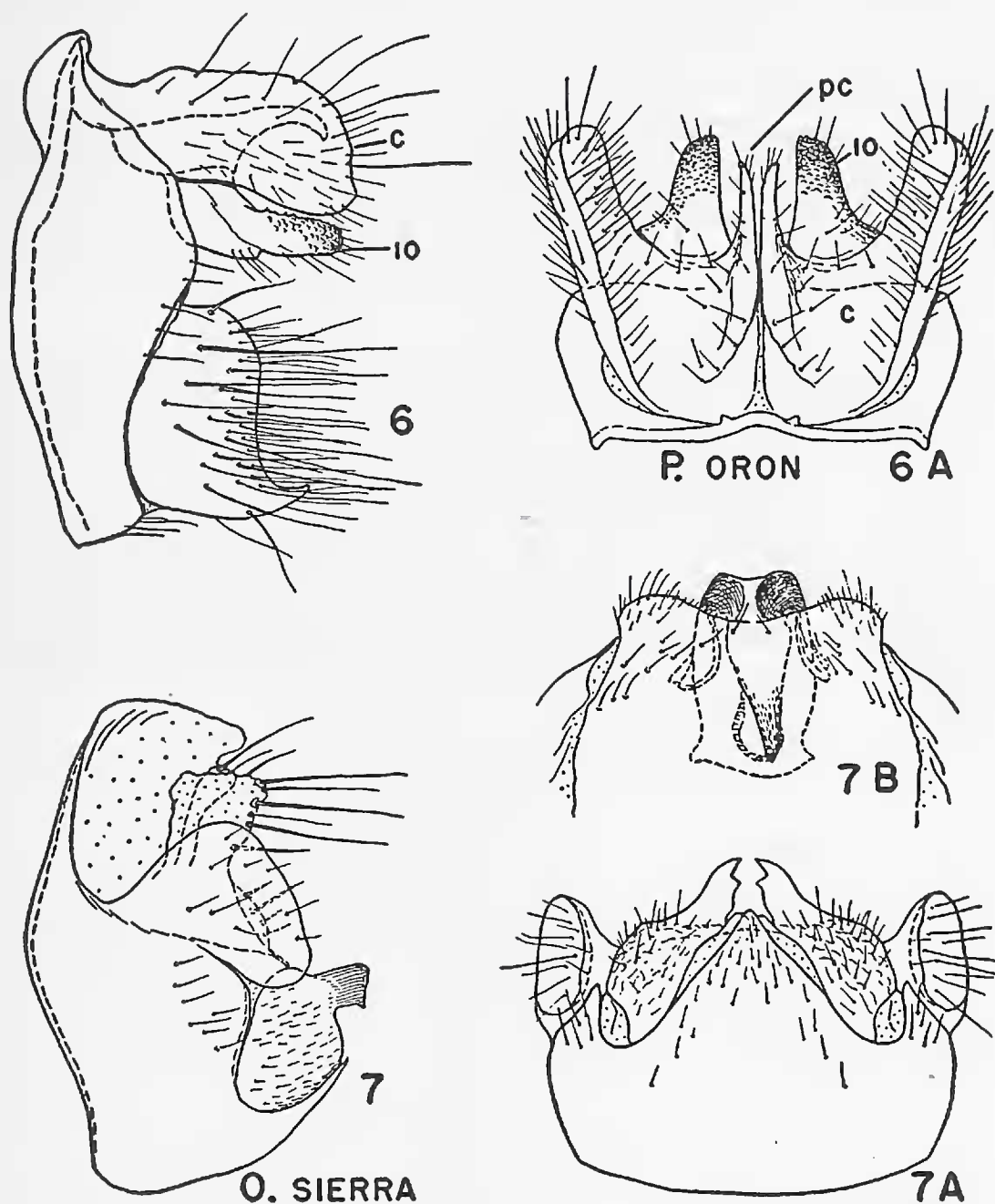
The species described below brings to three the number known in this genus. Only the males are known, and they may be separated by the following key:

KEY TO SPECIES (MALES)

1. Cerci having two pairs of mesal fingerlike processes (Denning 1941, fig. 11) *banksi* (Denning)
- Cerci having only one pair of mesal processes.....2
2. Mesal processes of cerci slender and fingerlike from both lateral and dorsal view and curved ventrad at tip, figs. 6, 6A.... *oron* Ross
- Mesal processes of cerci slender from dorsal view, but wide and bladelike from lateral view and straight (Ross 1941, fig. 89), *demita* Ross

Philocasca oron Ross, new species

Male—Length 15 mm. Color throughout light yellowish brown, the venter nearly straw color, the front wings slightly darker, many of the body hairs and most of the leg spines dark brown or black. General structure typical for genus.



EXPLANATION OF PLATE II

Fig. 6. *Philocasca oron*, male genitalia, lateral aspect; 6A, male genitalia, dorsal aspect. Fig. 7. *Oligophlebodes sierra*, male genitalia, lateral aspect; 7A, male genitalia, ventral aspect; 7B, female subgenital plate showing spermatheca.

Abbreviations used: *c*, cercus; *pc*, mesal process of cercus.

Male genitalia as in figs. 6 and 6A. Ninth segment narrow and straplike dorsad, only moderately wide in middle, reduced to about half its lateral width ventrad. Cerci large and irregular in outline from lateral view, the mesal process of each slender and curved ventrad at tip. Claspers large and deep, the ventral corner produced into a sharp posterior point. Tenth tergite with a pair of heavily sclerotized processes enlarging toward base and fusing almost completely with ventral portion of central part of each cercus. Aedeagus with a large ventral membranous mesal portion above which are a pair of long curved sclerotized rods which arise from a membranous socket at the base of the main portion of the aedeagus (this structure is typical for the genus).

Holotype, male, BEAR CREEK, CLATSOP COUNTY, OREGON, April 12, 1947, S. G. Jewett, Jr. (INHS).

OLIGOPHLEBODES Ulmer

Study of additional material of this genus has indicated the occurrence of interesting variations within certain species. In some cases this variation appears to be correlated with geographic distribution, on the basis of rather meagre collections at hand to date.

OLIGOPHLEBODES ARDIS Ross

An additional record of this species was obtained from Independence Pass, Colorado, Mt. Boy Park, 11,000 feet elevation, August 6, 1943, J. A. and H. H. Ross, 4♂♀. This distinctive species is the only one yet described in the genus in which the entire body is almost completely black.

OLIGOPHLEBODES SIGMA Milne

Dr. Knowlton has collected another record of this species from Cedar Breaks, Utah, 10,300 feet elevation, August 8, 1942, 3♂♀.

OLIGOPHLEBODES MINUTUS (Banks)

Available records indicate that this species is abundant in many mountain areas of Utah, Colorado, and Wyoming, and also in the Big Horn Mountains of Wyoming and the Black Hills of South Dakota. Material of *minutus* has been studied from the following localities: Colorado: Berthaud Pass (Swift Creek); Edloe (Alpine, 10,000'); Estes Park (Thompson River); Green Mt. Falls; Leadville; Rocky Mt. National Park (Cascade Lodge,

Chasm Falls, Hidden Valley Creek); Silver Plume; S. St. Vrain Creek (6 miles north of Ward, Boulder Co.). South Dakota: Hanna. Utah: Brigham Canyon; Currant Creek; Garden City; Logan Canyon (Rick's Spring, Spring Hollow, Tony Grove Camp); Mill Creek; Smithfield Canyon; Woodland. Wyoming: Big Horn Mts. (Shell Exit); Big Horn National Park (Bondi Camp, Tongue River); Fox Park; Wilson (Coal Creek).

OLIGOPHLEBODES SIERRA Ross

Some interesting material of this species, originally described from California, has been collected in Oregon and northern Wyoming. The Wyoming specimens differ from the California material (see Ross 1944, figs. 943 and 950) in having the apical tooth of the claspers more pronounced and sharper, figs. 7, 7A, and in having the lateral shoulder of the outer lobe of the subgenital plate much more pronounced, fig. 7B, occasionally even somewhat angulate. The Wyoming material was sufficiently constant that it seemed at first that it might represent a different species, but material from Oregon exhibited an almost perfect set of intergrades between the two extremes. In contrast with *minutus*, which has the wings definitely checkered with tawny and dark brown, *sierra* has the wings almost evenly yellowish brown, as is also the body. The light body will usually serve to differentiate it from *ruthae*, with which it has been taken.

Additional records of this species are as follows: California: Sequoia National Park (7,000 - 9,000'), June 23, 1929, E. C. Van Dyke, 3 ♂; Tulare County (Mineral King), August 4, 1923, C. L. Fox, ♂. Oregon: Mt. Hood (Horsethief Meadows) July 18, 1947, K. M. Fender, ♀ (Zigzag River) June 15, 1947, S. G. Jewett, ♂ ♀. Wyoming: Yellowstone National Park (Specimen Creek, Stations 1 and 2) August 6, 1947, J. A. and H. H. Ross, 22 ♂ ♀.

OLIGOPHLEBODES RUTHAE Ross

Since its original description considerable material of this species has come to hand. Some slight variation is exhibited by the claspers and also the height of the outer lobes of the genital plate. The claspers, however, are always elongate and slender, radically different from those of any other species of the genus.

Additional records include the following: Alberta: Laggan, July 10, 1925, O. Bryant, ♂. Montana: Glacier National Park,

(Many Glaciers C. G., Stream 2), July 12, 1940, J. A. and H. H. Ross, L.; Silver Gate (Soda Butte Creek), August 2, 1940, T. H. Frison, ♂. Oregon: Mt. Hood National Park (Government Camp, 4,000'), July 23, 1946, H. H. Ross, 8♂, 15♀. Wyoming: Wilson, (Coal Creek), August 12, 1940, T. H. Frison, 13♂, 2♀; Yellowstone National Park, (Dunraven Pass, Mt. Washburn), August 2, 1940, T. H. Frison, 2♀, (Specimen Creek, Stations 1, 2, 4, and 7; and small brook, Station 5), August 6 and 9, 1947, J. A. and H. H. Ross, 42♂♀.

The species is an abundant one in the northern part of the Rocky Mountain range, and early records indicated that it might be restricted to this area. The Oregon record shows, however, that its range extends westward at least into the Cascade Mountains, although it is apparently not abundant there.

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A NEW HOST RECORD FOR LEPTIDIELLA BREVIPENNIS (MULS.) (Coleoptera, Cerambycidae)

During April, 1949, nineteen specimens of the longicorn beetle, *Leptidiella brevipennis* (Mulsant), emerged from several dead twigs of a mission fig. The infestation was confined to a backyard tree and was severe enough to be quite noticeable. This insect has not previously been reported from fig trees.

Identification of these specimens was confirmed by Dr. E. Gorton Linsley who first reported it from California (Linsley, 1933, Pan-Pac. Ent., 9:170). This insect is thought to be of southern European origin.

Dr. Linsley has subsequently reared this species several times from shaded twigs of Persian walnut as far north as Sacramento.

—WOODROW MIDDLEKAUFF and JACK UNDERHILL.